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TARGET AUDIENCE: All CE flights

Electrical Safety

Synopsis

Between March and August of 2004, electrical mishaps killed two CEs and injured four others. Investigation revealed six primary causes: 1. Failure to test for voltage; 2. Failure to ground circuits/equipment; 3. Failure to follow lockout/tagout procedures; 4. Failure to use appropriate technical orders (T.O.s); 5. Failure to wear proper personal protective equipment (PPE); and 6. Failure to seek supervisory assistance when performing tasks above expertise level.

Simple basic electrical safety procedure mistakes can be deadly, so don't be complacent: stay focused and alert, and take the time to do the job both correctly and safely.

Establish an Electrically Safe Work Environment

Ensure that work is accomplished only on de-energized conductors or circuit parts that have been properly and safely isolated. Crew leaders and supervisors should review and ensure the following basic procedures are adhered to and are regularly briefed to everyone.

- Determine all possible sources of electrical supply.
- Properly disconnect each source.
- Apply lock-out/tag-out devices.
- Verify that all circuit parts are de-energized; test with proper instrument(s).
- Ground all phase conductors or circuit parts before touching them.
- Follow established procedures outlined in equipment T.O.s.

Energized work is prohibited except in rare circumstances, and *only* when approved by the appropriate authority. Exercise extreme caution if such work is authorized. Before you start energized work, you must have an energized work permit that includes the following information:

- Description of work and location.
- Description of work practices to be followed.
- Electrical shock hazard analysis (determines the worker voltage exposure level, safe working distances, and the PPE necessary to minimize the possibility of electrical shock)
- Arc flash hazard analysis (determines the flash protection boundary and proper PPE category)
- Flash protection boundary (the distance from exposed live parts required to protect a worker from a second degree burn if an arc flash occurred)
- Necessary PPE to safely perform the task. (Supervisors must ensure that each worker has proper PPE to accomplish the job, and must promote a positive and compliant attitude regarding its use. Workers have the responsibility to know how and when to use PPE.)
- Means to restrict unqualified persons from the work area, such as barriers.
- Evidence of completing the job briefing; supervisors must document all energized work briefings.

Air Force Electrical Safety Guidance

These documents provide a comprehensive knowledge source for establishing an electrically safe working environment:

AFI 32-1064, Electrical Safe Practices

(<http://www.e-publishing.af.mil/pubfiles/af/32/afi32-1064/afi32-1064.pdf>)

Engineering Technical Letter (ETL) 04-15, Electrical Safety Guidance

(<http://www.afcesa.af.mil/userdocuments/publications/ETL/ETL%2004-15.pdf>)

Unified Facilities Criteria (UFC) 3-560-02, Electrical Safety

(http://www.afcesa.af.mil/ces/cesm/documents/rev1_Bars.pdf)